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VI. *Account of several Lunar Iris.* By Marmaduke Tunstall,
Esq. F. R. S. in Two Letters to Sir Joseph Banks, Bart.
P. R. S.

Read May 30, 1782, and January 23, 1783.

TO SIR JOSEPH BANKS, BART. P. R. S.

DEAR SIR,

AS I am ever happy to seize on any opportunity to express my regard to yourself, and my attention to the Royal Society, I cannot omit this occasion of acquainting you of rather an unusual phenomenon seen here on Friday night last, the 27th of February, between seven and eight, especially as it might probably be visible only at a small distance. It was an *Iris lunaris*, or *Lunar rainbow*, in tolerable distinct colours, similar to a solar one, but more faint; the orange colour seemed to predominate. I was unfortunately not a spectator myself; but can sufficiently rely on the authority, as a clergyman in my house, and some servants, on whom I can depend, observed it for near a quarter of an hour. It happened at full moon, at which time alone they are said to have been always seen. Though ARISTOTLE is said to have observed two, and some others have been seen by SVELLIUS, &c. I can only find two described with any accuracy; viz. one by PLOT, in his History of Oxfordshire, seen by him in 1675, though without colours; the other seen by a Derbyshire gentleman at Glapwell

near Chesterfield, described by THORESBY, and inserted in N^o 331. of the Philosophical Transactions: this was about Christmas, 1710, and said to have had all the colours of the *Iris solaris*. The night was windy, and though there was then a drizzling rain and dark cloud, in which the rainbow was reflected: it proved afterwards a light frost. That this very imperfect account, though it may be strictly relied on, may give any satisfaction to you, or the gentlemen of the Society, would be the occasion of great pleasure to

DEAR SIR, your much obliged, &c.

Wycliffe near Greta Bridge, Yorkshire,
March 1, 1782.

The particular circumstance, which appeared extraordinary to THORESBY, of the bow being nearly equal in size to that of the solar one, seemed to be verified by this, as the extent appeared nearly of the same dimensions. The wind was at south-west.

DEAR SIR,

Wycliffe, Oct. 23, 1782.

I TROUBLED you early in spring with an account of a rather singular phenomenon, seen here on the 27th of February, between seven and eight o'clock, viz. a *lunar* Iris with prismatic colours. Since that I have seen two more here; one July the 30th, about eleven o'clock, which lasted about a quarter of an hour, without colours; the last, the cause of
my

my troubling you with this, was on Friday the 18th instant, perhaps the most extraordinary one of the kind ever seen, and of which I was myself a spectator for most of its duration, as were many in my house and neighbourhood. It was first visible about nine o'clock, and continued, though with very different degrees of brilliancy, till past two. At first, though a strongly marked bow, it was without colours; but afterwards they were very conspicuous and vivid in the same form as in the solar, though fainter; the red, green, and purple, were most distinguishable. About twelve it was the most splendid in appearance; its arc was considerably a smaller segment of a circle than a solar; its south-east limb first began to fail, and a considerable time before its final extinction; the wind was very high, nearly due west, most part of the time, accompanied with a drizzling rain. It is a singular circumstance, that three of these phenomena should have been seen in so short a time in one place, as they have been esteemed ever since the time of ARISTOTLE, who is said to have been the first observer of them, and saw only two in fifty years, and since by PLOT and THORESBY, almost the only two English authors who have spoke of them, to be exceeding rare. They seem evidently to be occasioned by a refraction in a cloud or turbid atmosphere, and in general indications of stormy and rainy weather, so bad a season as the late summer having, I believe, seldom occurred in England. THORESBY, indeed, says, the one he observed was succeeded by several days of fine serene weather.

One particular, rather singular, in the second, *viz.* of July the 30th, was its being six days after the full of the moon, and the last, though of so long a duration, was three days before the full; that of the 27th of February was
exactly

exactly at the full, which used to be judged the only time they could be seen, though in the Encyclopedie there is an account that WEIDLER observed one in 1719, in the first quarter of the moon, with faint colours, and in very calm weather.

No lunar Iris, I ever heard or read of, lasted near so long as that on the 18th instant, either with or without colours.

